SPECIFICATION AMENDMENTS:

Please replace the paragraph on page 2, lines 7 through 30, with the following amended paragraph:

When a subscriber switches on a mobile station 100 to communicate with a base station 102, the mobile station 100 must ~~establishes~~ establish time synchronization with the base station 102 to properly receive information. As shown in figure 2, the mobile station 100 has an internal frequency reference, typically a crystal oscillator 216. The frequency of the crystal oscillator 216 varies with temperature, time, and environmental conditions. The crystal oscillator 216 provides a reference frequency to a radio frequency (RF) phase lock loops (PLL) 220 and [[a]] an intermediate frequency (IF) PLL 218. The RF PLL 220 generates a local oscillator frequency to down-convert the received RF signal. The PLL local oscillator frequency must be precisely matched the frequency of the received signal to accurately modulate information carried by the signal. In order to maintain the synchronization between the mobile station 100 and the rest of the network, the local oscillator frequency is periodically adjusted by a burst sequence in a Frequency Connect Channel (FCCH). The FCCH burst sequence is a sinusoid (a section of sine wave) having a frequency equals to a quarter (1/4) of the transmission bit rate. For example, the transmission bit rate of the GSM system is 270.8 kilo-bits per second (Kb/s), so the burst frequency is 67.7 ~~kilo-~~

~~Hertz (KHz)~~ Kilohertz (kHz). The FCCH burst sequence will last for 577 micro second (μs), as each timeslot in the GSM system is 577 μs.

Please replace the paragraph on page 3, lines 1 through 20, with the following amended paragraph:

Conventional methods for burst frequency identification are generally divided into three categories: frequency, phase, and magnitude. Frequency detection methods are widely used because frequency is usually immune to noise and distortion. The burst frequency is identified by observing an acute peak in the frequency domain. Phase detection methods identify the burst frequency by storing and examining the phase of each sample in a received signal. If the phase increases linearly for a period of time, the received signal is assumed to be a sinusoid and the rate of change of phase is the frequency of the sinusoid. Amplitude detection methods are usually not applicable because amplitude is too sensitive to noise and distortion induced by environmental factors. However, the frequency detection methods need a spectrum transformation such as Fast Fourier Transform (FFT) to convert frequency into time, and the spectrum transformation is usually very [[time-consumed]] time-consuming. Thus, the frequency detection method is not suitable for real-time applications such as FCCH burst search in the GSM system. The calculations involved in the phase

detecting method as well as detecting a line with uncertain slope are relatively complex.